SANITARY

RULES AND REGULATIONS,

BY

MISSISSIPPI

STATE BOARD OF HEALTH.

Suggestions in Regard to

GENERAL SANITATION,

Disinfectants and Deodorants,

ADOPTED APRIL, 1880.

JACKSON, MISS.,
CLARION STEAM PUBLISHING HOUSE.

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SANITARY RULES AND REGULATIONS

—OF THE—

Mississippi State Board of Health.

FOR PREVENTION OF DISEASE.

RULE 1.—No privy-vault, cesspool, or reservoir into which a privy, water-closet, stable or sink is drained, except it be water tight, shall be established or permitted within fifty feet of any well, spring, or other source of water used for drinking or culinary purposes.

Reason.—Soil, especially if it be sandy loam or gravel, or clay with inclined strata or layers, is often an unsuspected conductor of the liquid contents of such receptacles to wells or springs of water. Many well authenticated cases of typhoid fever and other dangerous and often fatal diseases have been traced to the use of water so contaminated.

RULE 2.—In privies with no vault below the surface of the ground, dry earth or coal ashes must be used in sufficient quantities, and often enough to absorb all the fluid parts of the deposit, and the entire contents must be removed sufficiently often to insure cleanliness.

Reason.—Dry earth or coal ashes are nearly complete disinfectants if used in sufficient quantities to absorb all the fluids.

Rule 3.—Privies with vaults and all cesspools and reservoirs named in Rule 1, must be cleaned out at least once a year between the months of November and March, and from the first day of March to the last day of November shall be kept thoroughly disinfected by adding to the contents once every month, a solution of copperas.

Reason.—During the hot season putrescent gases are given off from the decomposing excreta in such vaults. These gases are not only very offensive, but are frequently the cause of dangerous diseases. They contain compounds of ammonia, which are decomposed by solution of copperas and the foul odor destroyed. In a family vault two pounds of copperas a month is usually sufficient. In vaults used by a large number of persons, five or more pounds of copperas should be used monthly.

Rule 4.—No privy-vault or cesspool shall open into any stream, ditch or drain, except such sewers as are covered and well protected, or such as are kept thoroughly cleansed and purified.

Reason.—Same as for Rule 1.

Rule 5.—No night soil or contents of cesspools shall be removed unless previously deodorized by mixing with solution of copperas; and during removal the material shall be covered with a layer of fresh earth, except the removal be by the "Odorless Excavating Process."

Reason.—Same as for Rule 3.

Rule 6.—All sewer drains that pass within fifty feet of any source of water used for drinking or culinary purposes shall be water tight.

Reason.—The danger of contaminating the water.

Rule 7.—No sewer drain shall empty into any lake,

pond or other source of water used for culinary purposes, nor into any standing water whereby health may be endangered.

Reason.—Same as for Rule 1.

RULE 8.—No house offal, dead animals, or refuse of any kind shall be thrown upon the streets or public highways, or left exposed by any person, and no butcher, fish monger or vendor of merchandise of any kind, shall leave any refuse upon the streets, or uncovered by earth upon the lots of any county, city, town, or village, and putrid and decaying animal or vegetable matters must be removed from all cellars and out-buildings, on or before May first in each year.

RULE 9.—All families, hotels, restaurants and others accumulating garbage are required to have a proper covered receptacle for swill and house offal, and to cause the contents to be regularly removed as often as twice a week between the first day of May and the first day of November, and once a week at all other seasons.

Reasons for 8 *and* 9.—Decomposing animal and vegetable matters are the sources of poisonous gases, dangerous to health.

RULE 10.—No hogs shall be kept in pens within one hundred and fifty yards of any dwelling, except in such with floors, kept entirely free from standing water, and regularly and freely disinfected.

The health authorities will order the removal of such animals at any time, when they appear to be prejudicial to the public health, safety, or comfort.

Reason.—Same as for 8 and 9.

RULE 11.—No animals affected with an infectious or contagious disease, shall be brought within the limits of any county, city, town or village, except by permission of the Chief Health Officer of the county or the municipal Board of Health if it be an incorporated town, and there is such a Board. No diseased animal,

or its flesh, and no decayed, diseased, or unfit meat, fish, vegetables, or fruit, or diseased, impure, or adulterated milk or other article, shall be sold or offered for sale as food.

RULE 12.—No slaughter house or abattoir shall be established or used as such within any county, city, town or village, unless kept free from all obnoxious smells, and all offal be removed every day; and no melting or rendering house, and no place for manufacturing or other business *giving rise to obnoxious or injurious vapors or odors*, shall be established or used as such within any county, city, town or village except by the permission of the Chief Health Officer of the county or the Municipal Board of Health if it be an incorporated town and there is such a Board.

RESTRICTION AND DESTRUCTION OF INFECTIOUS AND CONTAGIOUS MATTER.

RULE 13.—Any householder in whose dwelling there shall occur a case of cholera, yellow fever, scarlet fever, diphtheria or small-pox, shall immediately notify the Chief Health Officer of the county or the Municipal Board of Health if it be in an incorporated town, and there is such a Board, and, until instructions are received from one of the above named health authorities, shall not permit any clothing or other property that may have been exposed to infection to be removed from the house, nor shall any occupant take up residence elsewhere without the consent of the health authorities.

RULE 14.—Any physician who may be called to a case of any of the diseases specified in the foregoing rule shall, at once, report such case to the Chief Health Officer of the county or the Municipal Board of Health if it be in an incorporated town, and there is such a Board, and receive instructions in regard thereto; and whenever there shall come under the observation of

any physician such number of cases of measles, typhoid fever, dysentery, whooping-cough, or cerebro-spinal meningitis as in his opinion to justify the belief that an epidemic thereof is threatened or exists, he shall at once report the same to the local health authorities, with such suggestions, in regard thereto, as may seem to him best.

RULE 15.—No person or article liable to propogate a dangerous disease shall be brought within any county, city, town or village without the special consent and direction of the Chief Health Officer of the county, or the Municipal Board of Health, if it be an incorporated town, and there is such a Board; and whenever it shall come to the knowledge of any person that such person or article has been brought within such limits, he shall immediately give notice thereof to the Chief Health Officer of the county, or the Municipal Board of Health, together with the location thereof.

RULE 16.—No person sick with any of the diseases specified in Rule 13 shall be removed at any time except by permission and under direction of the Chief Health Officer of the county, or the Municipal Board of Health, if it be an incorporated town, and there is such a Board.

RULE 17.—Persons affected with any of the diseases specified in Rule 13, and all articles infected by the same, shall be immediately separated from all persons liable to contract or communicate the disease, and none but physicians, nurses and the clergyman of the family shall be allowed access to persons sick with these diseases, and these persons, in the case of yellow fever, small-pox or scarlatina, after having visited such sick, shall not leave the premises, or mix with other persons until they change their clothing in a pure atmosphere, or are thoroughly disinfected.

RULE 18.—Persons recovering from any of the diseases specified in the preceding rules, and their nurses,

shall not leave the premises till they have been thoroughly bathed, and their clothing disinfected.

RULE. 19.—Houses in which yellow fever cholera, or small-pox have occurred, shall be subjected to sulphurous fumigation.

RULES FOR DISINFECTION IN CONTAGIOUS OR INFECTIOUS SICKNESS.

I.—DISINFECTANTS TO BE EMPLOYED.

1. Roll-sulphur (brimstone) for fumigation.

2. Sulphate of iron (copperas) dissolved in water in the proportion of one and a half pounds to the gallon; for soil, sewers, etc.

3. Sulphate of zinc and common salt, dissolved together in water in the proportions of four ounces sulphate and two ounces salt to the gallon; for clothing, bed-linen, etc.

NOTE.—Carbolic acid is not included in the above list, for the following reasons: It is very difficult to determine the quality of the commercial article, and the purchaser can never be certain of securing it of proper strength; it is expensive, when of good quality, and experience has shown that it must be employed in comparatively large quantities to be of any use; it is liable, by its strong odor, to give a false sense of security.

II.—HOW TO USE DISINFECTANTS.

1. *In the sick-room.*—The most available agents are fresh air and cleanliness. The clothing, towels, bed-linen, etc., should, on removal from the patient, and before they are taken from the room, be placed in a pail or tub of the zinc solution, boiling hot if possible.

All discharges should either be received in vessels containing copperas solution, or, when this is impracticable, should be immediately covered with copperas solution. All vessels used about the patient should be cleansed with the same solution.

Unnecessary furniture—especially that which is stuffed—carpets and hangings, should, when possible, be removed from the room at the outset; otherwise, they should remain for subsequent fumigation and treatment.

2. *Fumigation* with sulphur is the only practicable method for disinfecting the house. For this purpose the rooms to be disinfected must be vacated. Heavy clothing, blankets, bedding, and other articles which cannot be treated with zinc solution, should be opened and exposed during fumigation, as directed below. Close the rooms as tightly as possible, place the sulphur in iron pans supported upon bricks placed in wash-tubs containing a little water, set it on fire by hot coals, or with the aid of a spoonful of alcohol, and allow the room to remain closed for twenty-four hours. For a room about ten feet square, at least two pounds of sulphur should be used; for larger rooms, proportionally increased quantities.

3. *Premises.*—Cellars, yards, stables, gutters, privies, cesspools, water-closets, drains sewers, etc., should be frequently and liberally treated with copperas solution. The copperas solution is easily prepared by hanging a basket containing about sixty pounds of copperas in a barrel of water.

4. *Body and bed clothing, etc.*—It is *best* to burn all articles which have been in contact with persons sick with contagious or infectious diseases. Articles too valuable to be destroyed, should be treated as follows:

(*a.*) Cotton, linen, flannels, blankets, etc., should be treated with the boiling-hot zinc solution; introduce piece by piece; secure thorough wetting, and boil for at least half an hour.

(*b.*) Heavy woolen clothing, silks, furs, stuffed bedcovers, beds and other articles which cannot be treated with the zinc solution, should be hung in the room during fumigation, their surfaces thoroughly exposed,

and pockets turned inside out. Afterward they should be hung in the open air, beaten, and shaken. Pillows, beds, stuffed mattresses, upholstered furniture, etc., should be cut open, the contents spread out and thoroughly fumigated. Carpets are best fumigated on the floor, but should afterwards be removed to the open air and thoroughly beaten.

5. *Corpses* should be thoroughly washed with a zinc solution of double strength; should then be wrapped in a sheet wet with the zinc solution, and buried at once. Metallic, metal-lined, or air-tight coffins should be used when possible.

SUGGESTIONS

IN REGARD TO GENERAL SANITATION.

Drainage.—A thoroughly-drained soil is all-important. This should be secured where practicable, by a complete system of sewers or underground drains. If this is not practicable, superficial or surface drains should be properly located, and frequently examined, so as to insure cleanliness and effectiveness.

It is of the first importance that dwelling-houses should be built on dry ground so elevated that there shall be no possibility of an accumulation of stagnant water under the floors at any time.

Constant inspection of houses, cellars, yards and outbuildings is imperative, so as to prevent the accumulation of filth, garbage or masses of decomposing organic matter so prejudicial to health. It is equally necessary that some means be devised for the disposal of the same, so as to render it harmless.

Water-Closets and Privies.—*Foul odors are Nature's signal of danger.* Water-closets should be properly constructed, kept free from odor and always plentifully supplied with water. The waste-pipes should be wholly disconnected from all other pipes and provided with independent ventilation. They should be so located as to avoid all possibility of polluting the air of any other part of the house.

Where privies are used, they should be built *above ground with water-tight vaults*, kept always free from foul smell by the liberal use of *dry earth* sifted upon the contents or by the use of a solution of copperas. They should be emptied at least twice a year or oftener if the contents accumulate to more than one-third the capacity of the vault. The walls and ceilings should be thoroughly whitewashed.

Instead of ordinary privies, the *pail system* in general use in many of the manufacturing towns of England is recommended as being found to combine economy, simplicity of construction, easy management, with great facility for removing contents without odor or inconvenience.

Privies should be so placed as to prevent their exhalations from contaminating the air of houses or polluting the sources of water supply from wells or cisterns.

Water Supply. "Water, next to air, is the chief necessary of life." We may even place it before food, because all food is largely composed of it; and it is required, too, for personal cleanliness, and for the purification of our houses and their surroundings.

Running streams and *springs*, which are the best sources of water supply, should be frequently examined, in order to detect otherwise unsuspected causes of pollutions.

Cisterns should be constructed of suitable material, carefully built and covered, and so placed that no foul

air can pass through or over the water they contain. The overflow pipes from cisterns should be free from connection with any other pipes. Roofs and gutters supplying cisterns must be frequently inspected, and some simple contrivance should be adopted to insure their careful cleansing, before the water is allowed to run into the cistern. Cistern-water ought to be frequently examined and kept free from color, odor, or other indications of impurity.

Wells are the most dangerous sources of water supply, for few wells are safe from surface pollution. Wells should, therefore, be properly located, to avoid all possible risk of contamination from their surroundings, carefully built with elevated curbs and covered tops. The water they contain should be examined at short intervals.

A simple method of examination is by dissolving a lump of loaf sugar in a quantity of the suspected water in a clean bottle, which should have a close-fitting glass stopper. Set the bottle in the window of a room where the sunlight will fall on it. If the water remains bright and limpid after a week's exposure, it may be pronounced fit for use. But if it becomes turbid during the week, it contains enough impurity to be unhealthy. Such water should not be used for drinking purposes until it has been boiled and filtered; after which it should be aerated by any simple process, such as pouring several times from one vessel into another in the open air. The addition of a solution of permanganate of potassa will also serve, in most cases, to sufficiently purify water for drinking purposes. Eight grains of the permanganate to one ounce of distilled or boiled water will make the solution. Add one drop of this to half a pint of the suspected water; if the red tint disappears in half an hour, add another drop. For every drop that loses its color in the half pint, there will be from one-half to two grains of or-

ganic impurity in one gallon of the water. If such water must be used, drop in the permanganate until the red tint remains; the solution in this proportion is not injurious, nor does it taste unpleasantly.

Dwellings.—The prime conditions of health in a house depend upon *cleanliness, pure air and unpolluted water;* the prompt and thorough removal of all refuse; and the perfect exclusion of all foul matters arising outside the house.

Good ventilation is absolutely necessary. Rooms should be frequently aired, and if possible the sunshine admitted daily. Overcrowding is a fruitful source of air-pollution in dwellings.

Zealous attention should be paid to cellars, pantries and passages. Mold, dampness and foul smells are never to be neglected. The sun's rays, free ventilation and a lavish use of whitewash are excellent scavengers.

The floors of dwellings should be frequently washed. Choose for this purpose a dry day; doors and windows to be left open during and after the operation until thoroughly dry. The floors of dwellings should always be raised from three to four feet above ground, so as to insure perfect ventilation beneath, and the site should be higher than the surroundings, so as at all times to prevent dampness or presence of stagnant water.

DISINFECTANTS AND DEODORANTS.

Deodorizers, or substances which destroy smells, are not necessarily disinfectants, and disinfectants do not necessarily have an odor.

Disinfection cannot compensate for want of cleanliness nor of ventilation.

From the long list of these agents the following have been selected, as it is believed they will meet all ordinary demands:

1.—FRESH STONE LIME.

Application.—To absorb moisture and putrid fluids.

How used.—Pulverized and scattered over places to be dried. In damp rooms it should be placed in pans in liberal quantities. Mixed with water, it is used to lime wash walls, and ceilings. It is useful when spread over heaps of fresh manure as a preservative.

2.—CHLORINATED LIME.

Application.—To destroy putrid gases and check putrefaction.

How used.—A solution of *chlorinated lime* made by straining and decanting a gallon of water into which a pound of the lime has been dissolved is a good disinfectant fluid to use in washing the bodies of those who have died of small-pox, cholera, scarlet fever and other diseases. It is a good solution to use in the sick room for cleansing the hands of the nurse, and into which small articles can be immersed which are awaiting an opportunity to be boiled.

To generate *chlorine gas*, pour strong vinegar or dilute sulphuric acid upon chlorinated lime placed in pans in the room. Or, place in an earthen vessel four ounces of peroxide of manganese and pour upon it one pound of muriatic acid.

Chlorine gas is regarded as an efficient disinfectant, but it must be *efficiently applied*. It is very efficient in disinfecting confined or infected atmosphere and porous substances. Its rapid diffusion and power of penetration are great. It destroys sulphuretted hydrogen, ammonia, and all fetid organic compounds. Its odor penetrates far beyond its power as a disinfectant, hence its real degree of influence may be deceptive. It can appropriately be used in disinfecting foul cellars and rooms unoccupied.

3.—DRY EARTH.

Application.—To absorb effluvia from decaying animal and vegetable matter, and appropriately human excreta.

Dry earth is nearly a complete disinfectant if used in sufficient quantities to absorb all moisture. It is especially applicable to the deodorizing of privy contents, where the basin is shallow, with a limited quantity of fluid. It should be abundantly applied.

4.—SULPHUROUS ACID GAS.

Application.—To disinfect rooms and infected clothing. Applied only in case of unoccupied rooms. To be effectual in destroying disease germs, the fumes must be so strong that they would destroy human life.

Can be used in disinfecting rooms and clothing after cases of *yellow fever*, *small-pox*, *scarlet fever*, *cholera and typhoid fever*.

Sulphurous acid has long been esteemed as a powerful disinfectant. It is to be preferred to *nitrous acid* or *chlorine gases*, because of the great irritation these latter produce upon the mucous membrane of the air passages when inhaled.

These gases should only be used under the direction of a competent physician.

How used: Place in an earthen vessel or iron kettle containing a small quantity of ashes, a few live coals, upon which place from one to four pounds of sulphur, according to the size of the room. For a room about ten feet square, at least two pounds of sulphur should be used. For larger rooms, proportionally increased quantities.

To guard against accident by fire, it is well to place the vessel on some fire proof article, or suspend it over a tub of water. As soon as the sulphur is ignited, the room having previously been rendered tight, should be closed and remain closed for twelve or twenty-four hours.

Ventilation, and painting the wood work, white-washing and re-papering the walls, will complete the process, and fit the room for re-habitation.

5.—SULPHATE OF IRON (COPPERAS.)

Application.—To disinfect privies, cess pools, drains, sewers, and all vessels and places receiving the discharges of the sick. It decomposes the sulphuretted hydrogen and the ammonical compounds so poisonous and offensive in privy vaults.

How used.—Dissolve one and a half or two pounds in a gallon of water. A privy vault which accommodates an ordinary sized household, will require at least one-eighth of this quantity twice every week during the hot summer months. The contents of a privy six feet in diameter and twelve feet deep, will require twenty pounds of copperas to disinfect it. Masses of filth in privies, sewers or drains should be thoroughly saturated with it, at brief intervals, until all offensive odors are gone.

6.—CARBOLIC ACID.

Application.—Mixed in the proportion of one part acid to from forty to one hundred parts water.

How used.—In solution in water of varying strength, according to the purposes to which it is be applied. It is especially adapted to disinfect *sewage*, *foul grounds*, *drains*, *sinks*, *foul heaps of manure or garbage*, *stables or privies* and the air of foul places. On account of the offensive odor of the impure it would be better to use the pure acid. It is only admissible for out-door use on accounts of its odor.

7.—HEAT.

This may be applied as *dry air* or *boiling water*, or *heated steam.*

Dry Air.—Hot dry air is the most powerful and complete disinfectant. It chemically disorganizes noxious substances, and by producing thorough dessication, prevents putrefactive change.

It also sets in motion atmospheric currents which mechanically dissipate morbific agents. It has been proved that a temperature of 212 degrees Fahr. destroys the virus of small-pox; one of 200 degrees that of scarlet fever, and that vaccine virus being subject to a temperature of 140 degrees becomes speedily inert.

In the use of *dry heat* two things are to observed:

1. That the heat shall be equally distributed throughout the fabric so as to secure safety in all its parts.

2. That the temperature shall not be raised so high or continued so long as to destroy the fabric.

A temperature of 240 degrees or 250 degrees should be employed. This degree of heat can be applied to white woolen fabrics, linen, cotton, silk and paper, for two or three hours without danger. A longer time produces discoloration. An oven, cautiously heated, may be used to disinfect small articles.

Such articles or infected garments as will admit of being *boiled*, should be subjected to this process for at least two hours. Until such a process is commenced, all infected articles should remain immersed in some of the disinfecting fluids already mentioned.

For infected substances and garments that may be destroyed, *heat to destruction* should always be used.

8.—CHLORIDE OF ZINC.

Chloride of Zinc may be used instead of copperas, and has the advantage of neither bleaching nor staining white or colored fabrics with which it may come in contact. On this account, it is especially useful in disinfecting clothing, bedding, etc.

CLEANLINESS, PURE AIR, PURE WATER, GOOD FOOD AND PROPER CLOTHING,

Are great safeguards against infectious diseases. Artificial disinfectants cannot be made to supply the place of these essential conditions of personal and public health.